

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING DIVISION APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 1
	Application No. Below	DATE 5/9/2012
	PROCESSED BY T. Iwata	CHECKED BY

Northrop Grumman
500 – 800 N. Douglas St.
El Segundo, CA 90245
ID No.: 18294

EQUIPMENT DESCRIPTION:

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 5: FABRICATED METALS					
System 5: METAL FORMING					
METAL TUBE BENDING MACHINE, EATON LEONARD, MODEL VB30-GL, SERIAL NO. VB 30-109-GL, 20 KW ELECTRICALLY HEATED. A/N 528634	D229			VOC (9) [RULE 1124]	A63.10 B27.6 H23.5

A/N 528635: Title V/RECLAIM facility permit revision

CONDITIONS

A63.10: THE OPERATOR SHALL LIMIT EMISSIONS FROM THIS EQUIPMENT AS FOLLOWS:

CONTAMINANT	EMISSIONS LIMIT	
VOC	LESS THAN 15 LBS IN ANY CALENDAR MONTH	

TO ENSURE COMPLIANCE WITH THE MONTHLY VOLATILE ORGANIC COMPOUND (VOC) EMISSION LIMIT(S) OF THIS CONDITION, THE OPERATOR SHALL COMPLY WITH THE FOLLOWING RECORDKEEPING REQUIREMENTS:

- (1) THE OPERATOR SHALL COMPLY WITH RULE 109 (RECORDKEEPING FOR VOLATILE ORGANIC COMPOUND EMISSIONS).
- (2) WITHIN 14 CALENDAR DAYS AFTER THE END OF EACH MONTH, THE OPERATOR SHALL TOTAL AND RECORD VOC EMISSIONS FOR THE MONTH FROM ALL EQUIPMENT AND OPERATIONS COVERED BY THE MONTHLY EMISSION LIMIT(S). THE RECORD SHALL INCLUDE ANY PROCEDURES USED TO ACCOUNT FOR CONTROL DEVICE EFFICIENCIES AND/OR WASTE DISPOSAL. IT SHALL BE SIGNED AND CERTIFIED FOR ACCURACY BY THE HIGHEST RANKING INDIVIDUAL RESPONSIBLE FOR COMPLIANCE WITH DISTRICT RULES.
- (3) THE OPERATOR SHALL MAINTAIN A SINGLE LIST WHICH INCLUDES ONLY THE NAME AND ADDRESS OF EACH PERSON FROM WHOM THE FACILITY ACQUIRED VOC-CONTAINING MATERIAL REGULATED BY THE DISTRICT THAT WAS USED OR STORED

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 2
	Application No. Below	DATE 5/9/2012
	PROCESSED BY T. Iwata	CHECKED BY

AT THE FACILITY DURING THE PRECEDING 12 MONTHS.

- (4) THE OPERATOR SHALL RETAIN ALL PURCHASE INVOICES FOR ALL VOC-CONTAINING MATERIAL USED OR STORED AT THE FACILITY, AND ALL WASTE MANIFESTS FOR ALL WASTE VOC-CONTAINING MATERIAL REMOVED FROM THE FACILITY, FOR FIVE YEARS.

B27.6: THE OPERATOR SHALL NOT USE MATERIALS, WITH THE EXCEPTION OF METHYL ETHYL KETONE, XYLENE, TOLUENE, ISOPROPYL ALCOHOL, METHANOL AND ETHYL BENZENE, CONTAINING ANY TOXIC AIR CONTAMINANTS (TACS) IDENTIFIED IN THE SCAQMD RULE 1401, AS AMENDED 06/05/2009.

H23.5: THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
VOC	DISTRICT RULE	109

BACKGROUND:

Northrop Grumman submitted application no. 528634 to change conditions for a permitted tube bending machine (Device No. D229). The company wants to change condition no. A63.10, which limits VOC emissions from the machine, from 0.5 lb/day to a monthly equivalent limit of 15 lb/month. This is requested to offer more operational flexibility since the machine is not operated daily. The tube bending machine is used to slightly heat and bend tubes into various shapes. The lubricant that is used has a VOC content of 5.95 lb/gal and since that exceeds 50 g/l, the machine is not exempt from permitting under Rule 219 (e)(11). Monthly recordkeeping conditions will also be added to the permit.

Northrop Grumman is a Title V facility. A Title V renewal permit was issued to this facility on July 8, 2010. Northrop Grumman has proposed to revise their Title V renewal permit, under application no. 528635, by changing conditions for a tube bending machine. The proposed project is considered as a "minor permit revision" for RECLAIM pollutants, non-RECLAIM pollutants and hazardous air pollutants (HAPs) to the RECLAIM/Title V permit for this facility. This is the 6th revision since the last renewal.

PROCESS DESCRIPTION:

Northrop Grumman is an aircraft manufacturing facility. They primarily design and build the F/A-18's center and aft fuselages. They will also be involved in the future production of the new F-35 Joint Strike Fighter. The new F-35 Joint Strike Fighter is the next generation strike fighter that has been designed using cutting-edge technologies. It will replace a wide range of aging fighter and strike aircraft, such as the F16, F/A18, A-6 and A-10, used by the U.S. Air Force, Navy, Marine Corps and allied defense forces worldwide. Due to advancements made in

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 3
	Application No. Below	DATE 5/9/2012
	PROCESSED BY T. Iwata	CHECKED BY

composite structure technology, the aircraft was designed with fewer individual structural components to minimize structural weight and complexity of assembly.

The tube bending machine will also be used as part of Northrop's manufacturing process. The machine will be used to bend pipes into various shapes. The pipes are slightly heated using the machine's 20kW heater before bending. A solid-film lubricant (non-fastener lubricant) is used in the bending process. It has a VOC content of 5.95 lb/gal and meets the VOC limit of Rule 1124 (7.33 lb/gal). On average, a half a gallon is used in a month, though actual usage can be less (3.5 gals/yr in 2011). The bending machine will be operated 8-24 hrs/day, 5-7 days/wk and up to 52 wks/yr.

EMISSION CALCULATIONS:

VOC emission limit is changing only from daily (<0.5 lb/day) to monthly (<15 lb/month).

VOC content of lubricant = 5.95 lb/gal

Max. usage = 2.5 gal/mon

Operating schedule: 8-24 hrs/day, 5-7 days/wk and up to 52 wks/yr.

Monthly VOC emissions = $5.95 \times 2.5 = 14.9$ lb/mon

Daily VOC emissions = $14.9 \div 30 \text{ day/mon} = 0.49$ lb/day

Hourly VOC emissions = $0.49 \div 24 \text{ hr/day} = 0.02$ lb/hr

RULE ANALYSIS:

RULE 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school. The facility is not located within 1,000 feet of the outer boundary of a school, the closest school (North High School) is 0.7 miles away and there is no emission increase from this equipment.

RULE 212 (c)(2) & RULE 212(g): This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums specified in Rule 212(g). A public notice is not required since there is no emission increase from the equipment or facility.

RULE 212(c)(3): This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in a cancer risk equal or greater than one in a million. There is no increase in toxics from this change.

RULES 401 & 402: AQMD database has no records of visible emissions or nuisance complaints against this facility. Compliance with these requirements is expected with the proper operation of the equipment.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 4
	Application No. Below	DATE 5/9/2012
	PROCESSED BY T. Iwata	CHECKED BY

RULE 1124: By rule definition, a solid-film lubricant is a thin coating consisting of a binder system containing a chief pigment material of one or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene or other solids that act as a dry lubricant between faying surfaces. The lubricant used by Northrop contains graphite. It is brushed onto the tube and the machine clamps onto the tube. The lubricant protects the tube as the two surfaces faying together during bending. The VOC content of the lubricant is 5.95 lb/gal (714 g/l). The lubricant complies with the rule limit of 880 g/l for non-fastener solid film lubricants. Operation of the tube bender complies with the requirements of this rule.

RULE 1303(a): BACT is triggered since there is potential emission increase in any one day by switching from a daily limit of 0.5 to a monthly limit of 14 lb/month. However, BACT is compliance with Reg XI, Rule 1124. Compliance is expected.

RULE 1303(b)(1): VOC is the only criteria pollutant emitted from the equipment, modeling is not applicable.

RULE 1303(b)(2): There will not be an emission increase from the facility with this application. The equipment was previously limited to 0.5 lb/day of VOC emissions and will now be limited to a monthly equivalent of 15 lb/month (0.5 lb/day x 30 day/month).

RULE 1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: There is not an increase in toxic air contaminant emissions with this application and hence no cancer or health hazard risk (acute or chronic) increase. This is exempt under (g)(1)(B) – modification with no increase in risk.

REGULATION XXX:

This facility is in the RECLAIM program. The proposed project is considered as a “minor permit revision” for RECLAIM pollutants, non-RECLAIM pollutants, and hazardous air pollutants (HAPs) to the RECLAIM/Title V permit for this facility. Rule 3000(b)(12) specifies that a “minor permit revision” includes, but is not limited to any Title V permit revision that:

- Rule 3000(b)(12)(A)(v) – does not result in an emission increase of any RECLAIM pollutant over the facility’s starting Allocation plus the non-tradable Allocation, or higher Allocation amount which has previously undergone a significant permit revision process.
- Rule 3000(b)(12)(A)(vi) – does not result in an increase in emissions of a pollutant subject to Regulation XIII – New Source Review (non-RECLAIM pollutants) or a hazardous air pollutant (HAP).

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 5
	Application No. Below	DATE 5/9/2012
	PROCESSED BY T. Iwata	CHECKED BY

The proposed project is not expected to result in an emission increase of any RECLAIM pollutant or an increase in emissions of a pollutant subject to Regulation XIII – New Source Review (non-RECLAIM pollutants) or a hazardous air pollutant (HAP), and therefore is considered as a “minor permit revision” pursuant to Rule 3000(b)(12)(A)(v) and Rule 3000(b)(12)(A)(vi).

Since NO_x is a RECLAIM pollutant for this facility, a separate analysis shall be made to determine if the proposed permit revision is considered a “minor permit revision” for RECLAIM pollutants. Section B of the Title V permit shows that this facility’s NO_x starting Allocation plus the non-tradable Allocation is 15,104 pounds. The proposed project does not emit any NO_x emission. As a result, this proposed project is considered as a “minor permit revision” for RECLAIM pollutants.

To determine if a project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 6th permit revision to the Title V renewal permit issued to this facility on July 8, 2010. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued:

Revision	HAP	VOC	NO _x *	PM10	SO _x	CO
1 st Permit Revision: change of conditions (ICEs device nos. D125 & D126), change facility condition no. F58.1	0	0	0	0	0	0
2nd Permit Revision: Add new boiler (device no. D232)	0	-2	-16	-6	-70	7
3 rd Permit Revision: Convert P/Cs for two baghouses C227 & C228 to P/O (move from Section H to Section D). Remove replaced baghouses C101 and C213 from Section D.	0	0	0	0	0	0
4 th Permit Revision: Convert P/C for an autoclave D225 to P/O (move from Section H to Section D).	0	0	0	0	0	0
5 th Permit Revision: Add new boiler D234 to replace boiler D74.	0	0	-4	0	0	-5
6 th Permit Revision: Change condition (VOC daily to monthly) for tube bending machine, D229.	0	0	0	0	0	0
Cumulative Emissions Total	0	-2	-20	-6	-70	2
Maximum Daily	30	30	40*	30	60	220

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or HAPs.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING DIVISION</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 6	PAGE 6
	Application No. Below	DATE 5/9/2012
	PROCESSED BY T. Iwata	CHECKED BY

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “minor permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility.

ng 6th rev 528634 tube bender